Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of separating one or more sample materials into a plurality of fractions, comprising:

providing a system comprising:

a separation channel having a separation matrix disposed therein,

a source of additional separation matrix in fluid communication with the separation channel,

an injection channel in fluid communication with the separation channel at an intermediate point along the injection channel, and

a sample loading channel in fluid communication with the injection channel, a source of a first sample material, and a source of a reagent;

transporting the first sample material and the reagent into the sample loading channel, wherein the first sample material and the reagent form a mixture;

injecting a portion of the mixture from the sample loading channel, through the injection channel, into the separation channel;

separating the first sample material within the mixture into a plurality of fractions;

displacing ~~at least~~ a portion of the separation matrix from the separation ~~conduit~~channel after separating the first sample material into a plurality of fractions; and

transporting a second sample material into the sample loading channel, wherein the force used to transport the second sample material into the sample loading channel displaces the portion of the separation matrix from the separation ~~conduit~~channel and replaces the displaced portion of the separation matrix with additional separation matrix.

2. (previously presented) The method of claim 1, wherein the sample loading channel comprises a loading end and a waste end, the loading end being contacted with a source of the first sample material, and further comprising applying a first pressure difference across the sample loading channel to move the first sample material into the loading end of the sample loading channel and toward the waste end of the sample loading channel.

3. (previously presented) The method of claim 1, wherein less than 10% of the separation matrix in the separation channel is displaced during the step of injecting the first sample material into the sample loading channel.

4. (previously presented) The method of claim 1, wherein less than 5% of the separation matrix in the separation channel is displaced during the step of injecting the first sample material into the sample loading channel.

5. (currently amended) The method of claim 1, wherein less than 1% of the separation matrix in the separation ~~conduit~~channel is displaced during the step of injecting the first sample material into the sample loading channel.

6. (previously presented) The method of claim 1, wherein the separation channel is provided with a higher flow resistance than the sample loading channel.

7. (previously presented) The method of claim 6, wherein the separation channel comprises one or more of a greater length or a smaller cross-sectional area than the sample loading channel.

8. (previously presented) The method of claim 1, wherein the sample loading channel comprises a loading end and a waste end, the loading end being contacted with a source of the first sample material through a capillary element, and further comprising applying a first pressure difference across the sample loading channel to move the first sample material through the capillary element into the loading end of the sample loading channel and toward the waste end of the sample loading channel.

9. (previously presented) The method of claim 2, wherein a negative pressure is applied to the waste end of the sample loading channel to supply the first pressure difference across the sample loading channel.

10. (currently amended) The method of claim 2, wherein the injection channel and the separation channel are in fluid communication at a first fluid junction, and further comprising moving a portion of the first sample material in the injection channel through the first fluid junction and into the separation ~~conduit~~channel.

11. (previously presented) The method of claim 10, wherein the step of moving a portion of the first sample material through the first fluid junction further comprises applying a pressure differential across the injection channel.

12. (previously presented) The method of claim 10, wherein the step of moving the first sample material through the fluid junction further comprises applying a voltage difference across the injection channel.

13. (previously presented) The method of claim 12, wherein the step of separating the first sample material comprises applying a voltage difference across the separation channel, to electrophoretically separate the first sample material into different fractions.

14. (currently amended) The method of claim 2, wherein the separation channel is in fluid communication with a source of separation matrix, and further comprising applying a second pressure difference across the separation channel to transport an amount of separation matrix into the separation ~~conduit~~channel from the source of separation matrix after the first sample material is separated into a plurality of different fractions.

15. (previously presented) The method of claim 1, wherein the sample loading channel is in fluid communication with the source of reagent through a reagent channel, and wherein the reagent channel and the sample loading channel have differing flow resistances.

16. (previously presented) The method of claim 1, wherein the reagent is selected from a standard compound, a diluent, a detergent, or a labeling reagent.

17. (previously presented) The method of claim 1, wherein the sample loading channel has substantially no separation matrix disposed therein.

18. (currently amended) The method of claim 1, further comprising: ~~replacing the displaced portion of the separation matrix within the separation conduit; and~~

transporting the second sample material through the injection channel and into the separation channel to separate the second sample material into a second plurality of different fractions.

19. (currently amended) The method of claim 1 ~~1-18~~, wherein less than 90 % of the separation matrix is displaced ~~replaced in the replacing step~~.

20. (currently amended) The method of claim 1 ~~1-18~~, wherein less than 75 % of the separation matrix is displaced ~~replaced in the replacing step~~.

21. (currently amended) The method of claim 1 ~~1-18~~, wherein less than 50 % of the separation matrix is displaced ~~replaced in the replacing step~~.

22. (currently amended) The method of claim 1 ~~1-18~~, wherein less than 20 % of the separation matrix is displaced ~~replaced in the replacing step~~.

23. (currently amended) The method of claim 1 ~~1-18~~, wherein less than 10 % of the separation matrix is displaced ~~replaced in the replacing step~~.

24. (currently amended) The method of claim 1 ~~1-18~~, wherein less than 5 % of the separation matrix is displaced ~~replaced in the replacing step~~.

25. (currently amended) The method of claim 1 ~~1-18~~, wherein less than 1 % of the separation matrix is displaced ~~replaced in the replacing step~~.

26. (currently amended) The method of claim 1~~-18~~, wherein the separation ~~conduit~~channel has at least one microscale cross-sectional dimension.

27. (previously presented) The method of claim 26, wherein the separation channel is disposed in a microfluidic device.

28–54. (cancelled)